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| EXAMINER | |
|---|---|
| SAWAGED, SARI S | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 4126 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/676,940 | BARSOUM ET AL. | |
| | Examiner | Art Unit | |
| | SARI SAWAGED | 4126 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *01 October 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1,2,5,30,39,40,42,44,50,56-59,72,73,81-83,87,88 and 90-94* is/are pending in the application.

4a) Of the above claim(s) *1,2,5,30,39,40,42,44,87,88,90,91* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *50,56,57,58,59,72,73,81,82,83,92,93,94* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *8/02/2007, 7/10/2007, 7/10/2007, 3/25/2005, 1/04/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Election/Restrictions*

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

   I. Claims 1, 2, 5, 30, 39, 40, 42, 54, 87, 88, 90, and 91, drawn to a system that includes an interface device and a hand held device that receive and process auxiliary data from a modulated signal, classified in class 348, subclass 725.

   II. Claims 50, 56, 57, 58, 59, 72, 73, 81, 82, 83, 92, 93, and 94, drawn to a method of modulating a video signal with auxiliary data, classified in class 348, subclass 473.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the invention can be used to receive and decode auxiliary data from other modulation methods known at the time.

The subcombination has separate utility such as a method of modulating more bits of auxiliary data within a video signal. This method can also be used with other devices such as STBs and Televisions.

The examiner has required restriction between combination and subcombination inventions. Where applicant elects a subcombination, and claims thereto are subsequently found allowable, any claim(s) depending from or otherwise requiring all the limitations of the allowable subcombination will be examined for patentability in accordance with 37 CFR 1.104. See MPEP § 821.04(a). Applicant is advised that if any claim presented in a continuation or divisional application is anticipated by, or includes all the limitations of, a claim that is allowable in the present application, such claim may be subject to provisional statutory and/or nonstatutory double patenting rejections over the claims of the instant application.

3. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

(a) the inventions have acquired a separate status in the art in view of their different classification;

(b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;

(c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);

(d) the prior art applicable to one invention would not likely be applicable to another invention;

(e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

**Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined** even though the requirement may be traversed (37 CFR 1.143) **and (ii) identification of the claims encompassing the elected invention**.

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

**4. During a telephone conversation with Randy L. Canis, Reg. No. 44,584 on 1/9/2008 a provisional election was made without traverse to prosecute the invention of a method of modulating a video signal with auxiliary data, claims 50, 56, 57, 58, 59, 72, 73, 81, 82, 83, 92, 93, and 94. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1, 2, 5, 30, 39, 40, 42, 54, 87, 88, 90, and 91 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.**

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 50, 56, 92, and 94 are rejected under 35 U.S.C. 102(b) as being anticipated by Broughton et al. (hereinafter referred to as Broughton) (US 4,807,031).**

**Claim 50:**

Broughton discloses:

A method of modulating a video signal comprising:

"splitting a first portion and a second portion of a frame into a plurality of segments" (see Fig. 2, col. 6 lines 38-30).

"and modulating the video signal with auxiliary data by altering a pixel value of a plurality of pixels of at least one of a selected segment of the first portion or the second portion for the plurality of segments, the modulated video signal including a plurality of data bits encoded within the frame" (see col. 2 lines 40-44 and col. 7 lines 50-53).

**Claim 56:**

Broughton discloses:

A method of modulating a video signal comprising:

"obtaining a frame of a video signal from a display device; and determining whether auxiliary data is present in the frame by performing a field comparison on a plurality of segments of a first field and a plurality of corresponding segments of a second field for the frame" (see col. 6 lines 21-23, line 31, lines 56-67; col. 7 lines 50-53, and col. 8 lines17-21).

**Claim 92:**

Broughton discloses the first portion is a first field of the frame and the second portion is a second field of the frame (see col. 6 lines 32-35).

**Claim 94:**

Broughton discloses that the pixel value is intensity (see col. 6 lines 57-67, col. 3 lines 57-60).

### *Claim Rejections - 35 USC § 103*

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. **Claims 57, 58, 59, 72, 73, 81-83, 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broughton et al. (hereinafter referred to as Broughton) (US 4,807,031).**

**Claim 57:**

The limitation of claim 57 that further limits claim 56 is not specifically disclosed by Broughton. However, Broughton discloses comparing the luminance intensity of a plurality of segments from a field with the luminance intensity of a plurality of segments from a corresponding field (see col. 6 lines 21-23, line 31, col. 7 lines 50-53, and col. 8 lines17-21). Broughton also teaches that other modulation and/or coding techniques can be used (see col. 3 lines 6-20 and col. 7 lines 30-38). "Subtracting the intensity of a plurality of corresponding segments of the second field from the plurality of segments of the first field, subtracting the intensity of the plurality of segments of the first field from the plurality of corresponding segments of the second field, or a combination thereof", is *a field comparison of a plurality of segments of corresponding fields* as disclosed by Broughton. This would have been an obvious variation to the invention as disclosed by Broughton to one of ordinary skill in the art at the time the invention was made.

**Claims 58 and 59:**

The limitation of claim 58 that further limits claim 57 is not specifically disclosed by Broughton. However, Broughton discloses decoding a logic one as the auxiliary data when a segment of the first field has a raised luminance and a corresponding segment

of the second field has proportionately lowered luminance intensity, and decoding a logic zero when no contribution to the luminance is made. Broughton decided to use this approach because the overall average luminance and contrast between the video features and the background within the viewing area are preserved. This alternate line luminance modulation is also substantially invisible to the viewer. Broughton also teaches that other modulation and/or coding techniques can be used (see col. 3 lines 6-20 and col. 7 lines 30-38).

*"decoding a logic one as the auxiliary data when a segment of the first field is encoded and a corresponding segment of the second field is not encoded; and decoding a logic zero as the auxiliary data when the segment of the first field is not encoded and the corresponding segment of the second field is encoded"* **or** *"decoding a logic one as the auxiliary data when a corresponding segment of the second field is encoded and a segment of the first field is not encoded; and decoding a logic zero as the auxiliary data when the corresponding segment of the second field is not encoded and the segment of the first field is encoded"* are obvious variations of the invention as disclosed by Broughton and would have been obvious to one of ordinary skill in the art at the time the invention was made.

**Claim 72 and 73:**

Broughton discloses providing a benefit to the user based on the determining of the auxiliary data (see col. 2 lines 18-22 and 33-35).

One of the benefits disclosed by Broughton is "to provide interactive video educational and entertainment apparatus that permits the user to interact with a television program in real time. This encompasses the limitations of claim 73.

**Claim 81-83:**

Broughton discloses that it is desirable for his invention to be capable of data communications that is raster time –base error tolerant, and that requires no electrical connections to the television set (see col. 1 lines 54-57). Broughton also discloses that the receiver (detector) requires no synchronization with the raster scan timing of the television (see col. 9 lines 3-5).

While Broughton's decoder requires no raster time synchronization, the encoder in Broughton's invention must be synchronized with the raster scan timing. Broughton disclosed that there were decoders (of subliminal data) known at the time that require synchronization to the raster scan time intervals (see col. 1 lines 15-29). Broughton's patent is broad enough to encompass synchronous and asynchronous raster scan timing (see claims 1 and 4).

It would have been obvious to one of ordinary skill in the art to combine Broughton's invention with synchronization of vertical retrace period because these methods were well known.

**Claim 93:**

Broughton discloses splitting the viewing area (frame/fields) into a plurality of segments (see Col. 7 lines 50-53). Broughton doesn't specifically disclose that these segments are equal sized segments, however, this is within the scope of Broughton's invention.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARI SAWAGED whose telephone number is (571)270-5085. The examiner can normally be reached on Mon-Thurs, 9:00AM-5:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doon Chow can be reached on (571) 272-7767. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sari Sawaged/
Examiner, Art Unit 4126

/Dennis-Doon Chow/
Supervisory Patent Examiner, Art Unit 4126